

REMARKS

In the last Office Action it is noted that claims 1, 7, 16, 17, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated over the patent to Winter, et al.

Claims 1, 7, 16, 17, 20 and 21 are also rejected under 35 U.S.C. 102(b) as being rejected by the patent to Wittig, et al.

The other claims are rejected under 35 U.S.C. 103 over individual references or combinations of the references.

Also, the claims are objected and rejected for formal reasons.

In accordance with the Examiner's formal objections and rejections, the withdrawn dependent claims have been provided with corresponding identifiers, claim 6 has been canceled, and claims 21 and 22 have been amended. It is believed that the Examiner's grounds for the formal objections and rejections should be considered as no longer tenable and should be withdrawn.

After carefully considering the Examiner's grounds for the rejection of the claims over the art, it is respectfully submitted that claim 1, the broadest claim on file, should be still considered as patentably distinguishing over the art and should be allowed.

Before the analysis of the prior art, it is believed to be advisable to analyze claim 1 with reference numerals utilized by the drawings.

Claim 1, the broadest claim on file, defines a transmission-drive unit for a seat adjustment, comprising

a transmission housing 15;

a driven shaft 42 extending outwardly beyond said transmission housing 15;

a driven wheel 28 non rotatably arranged on said driven shaft 42;

a supporting element 38 which directly at least partially surrounds said driven shaft 42 without further components between said driven shaft 42 and said supporting element 38,

said driven wheel 28 and said supporting element 38 being arranged axially near one another so that said driven wheel is directly supported against said supporting element 38 when axial force action is applied from outside,

wherein said supporting element 38 is arranged between said driven wheel 28 and an inner side of said transmission housing 15.

As can be seen from claim 1, in the transmission-drive unit for a seat adjustment in accordance with the present invention the supporting element 38 directly at least partially surrounds the driven shaft 42 without further components between the driven shaft 42 and the supporting element 38, the driven wheel 24 and the supporting element 28 are arranged axially near one another so that the driven wheel is directly supported against the supporting element 38, the supporting element 38 is arranged between the driven wheel 28 and an inner side of the transmission housing 15.

First of all, it is respectfully submitted that the patents to Winter and Wittig applied by the Examiner against the claims were found in the European search report and cited as a prior art only, as not teaching the new features of the present invention. A copy of the European search report is enclosed herewith.

Secondly, it is again respectfully submitted that the references do not teach the new features of the present invention as defined in claim 1. It is completely clear that in the patent to Winter the supporting part 42 does not represent any transmission housing 28, since

in the supporting element 42 no transmission components are supported. The supporting part 42 in this embodiment performs the only function in the case of a crash to support the threaded nut 52. Therefore the supporting part 42 definitely is not a component of a transmission housing.

More particularly, the following can be said again about the references applied by the Examiner.

The patent to Winter teaches a seat adjustment device which has a safety feature against a crush in a traffic accident. A screw transmission 18 is rotatably connected with a screw shaft 20 and a screw wheel 24 in a transmission housing 28 composed of synthetic plastic, as explained in column 3, lines 12-16. Contrary to the Examiner's opinion expressed in the Office Action, the transmission housing in the patent to Winter is identified with reference numeral 28 and not with reference numeral 42. The component 42 represents a mechanical supporting part 42, which is formed as a bracket with two U-legs 44 and a web 47 connecting them with one another, as explained in column 3, lines 32-40.

The Examiner's interpretation of the supporting bracket 42 in the Office Action as the transmission housing is not justifiable since with such approach, the whole chassis of the vehicle can be considered as a housing for the adjusting drive or the screw transmission, which for a

person skilled in the art of course would clearly represent an error. In the patent Winter both the supporting bracket 42 and also the threaded nut 52, which can be considered as a supporting element, are clearly arranged outside of the transmission housing 28, so that in the event of a crash accident the screw wheel 24 can not be directly supported against the threaded nut 52 or the supporting bracket 42.

The patent to Winter does not provide any hint or suggestion for the following features which are now defined in the amended claim 1:

- The driven wheel 24 and the supporting element 32 are not arranged axially near one another, since as clearly shown in Figure 1, the transmission housing 28 is arranged between them;

- An action of outer force (crash) can not cause the abutment of the driven wheel 24 directly against the supporting element 52, since the transmission housing 28 is located between them;

- Since the supporting element 52 is not arranged between the driven shaft 28 and the inner side of a transmission housing 28, but instead outside of the

transmission housing, between an outer wall of the same and the bracket 42.

The advantage of the device in accordance with the present invention is that the supporting element is arranged inside the transmission housing so that the driven wheel can be supported directly on the supporting element, without additional components between them. Therefore the expensive structural space-intensive construction of an additional supporting bracket 42 disclosed in the patent to Winter is dispensed with.

The patent to Wittig discloses a construction which is remote from the present invention, since it teaches an eccentric transmission and no spindle drive. Via a screw 12, a screw wheel 27 is driven, which is connected for joint rotation with a hollow shaft 24. There the drive shaft 37 with the driven pinion 39 is not connected for joint rotation with the driven wheel 27, but instead via the both toothing 31 and 34 with a greater transmission ratio rotates through the hollow tooth wheel 33 relative to the drive wheel 27. This is disclosed in column 2, lines 65-68: rotatably supported.

Since such an eccentric transmission has two movable parts, for example a seat back turnable relative to a seat surface, possible

crush forces act not in an axial direction but instead tangentially to the shaft 37 via the pinion 39 or via the transmission housing 13 on the transmission. Therefore there is no problem, which is solved by the applicant's invention, namely to hold the transmission spindle also during a crash accident in the transmission housing. If in the transmission disclosed in the patent to Wittig a high axial force acts, the driven wheel 27, 24 does not receive any axial forces, since the driven wheel is not fixedly connected with the shaft 37. For receiving of axial forces the shaft 37 is supported completely independently from the driven wheel 27, 24, through the bearing bush 38 mounted by a clamping ring on the transmission housing 13.

The device of the present invention defined in claim 1 differs from the construction disclosed in the patent to Wittig by the following features:

-The driven wheel 27, 24 is not supported on the driven shaft 37 for joint rotation with it, since contrary to the opinion expressed in the Office Action, the eccentric region 35 of the driven wheel is supported via the roller bearing 29 rotatably relative to the toothed wheel 30, since it is connected through the hollow wheel 33 and the formation 35 with the shaft 37;

-The driven wheel 27, 24 is not arranged so that during action of an outer axial force the driven wheel 24 can directly support on the supporting element 38. The reason for this is that the shaft 37 is supported axially displaceably relative to the driven wheel 24. Therefore, the driven wheel 24 during action of an axial force is not loaded and thereby not pressed against the bearing bush 38 of the shaft 37;

-The supporting element 38 is not arranged between the driving wheel 24 and the inner side of the transmission housing 13, but instead only near to the driven wheel 24 and housing 13. The supporting surface of the supporting element 38 is located however clearly outside of the transmission housing 13, since the transmission housing 13, and not the driven wheel 24, is axially supported on a collar of the supporting element 38.

In view of the above presented remarks and amendments, it is believed that claim 1 as amended clearly and patentably distinguishes over the prior art and represented by the patents to Winter and Wittig and should be allowed.

The Examiner's attention is respectfully directed to the features of other claims.

Claim 17, in combination with the above-mentioned new features of claim 1, specifically defines that the driven shaft is formed as a spindle shaft 16 and the driven wheel is arranged inside the transmission housing. This is disclosed on page 3, lines 23-27 and shown in Figure 3.

Claim 20, in combination with the above-mentioned new features of claim 1, defines that the supporting element has an axial support surface, with which the supporting element is supported axially on an inner side of the transmission housing.

Claim 21, in combination with the above-mentioned new features of claim 1, defines that no further components are arranged axially between the driven shaft and the supporting element.

Claim 22 defines the features of original claims 1 and 5. In other words, in combination with the above-mentioned new features of claim 1, it defines that the drive shaft has a bead which is engaged by the driven shaft and has an outer diameter greater than an inner diameter of the supporting element.


It is respectfully submitted that the new features of the present invention which are now defined in these claims are also not disclosed in the references and can not be derived from them as a matter of obviousness.

It is respectfully submitted that the features of these claims are patentable in combination with the patentable subject matter of claim 1, despite the opposite opinion by the Examiner, and therefore these claims should also be considered as allowable.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 631-549-4700).

Respectfully submitted,



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Europäisches
Patentamt

EUROPÄISCHER RECHERCHENBERICHT

Nummer der Anmeldung
EP 01 12 8226

EINSCHLÄGIGE DOKUMENTE			
Kategorie	Kennzeichnung des Dokuments mit Angabe, soweit erforderlich, der maßgeblichen Teile	Betrifft Anspruch	KLASSIFIKATION DER ANMELDUNG (Int.Cl.7)
① X	DE 37 26 801 A (TEVES GMBH CO OHG ALFRED) 23. Februar 1989 (1989-02-23) * das ganze Dokument *	1, 2, 10, 11	B60N2/02
② A	DE 197 09 852 A (KEIPER GMBH & CO) 24. September 1998 (1998-09-24)		
③ A, D	EP 0 759 374 A (BOSCH GMBH ROBERT) 26. Februar 1997 (1997-02-26)		
			RECHERCHIERTE SACHGEBIETE (Int.Cl.7)
			B60N
Der vorliegende Recherchenbericht wurde für alle Patentansprüche erstellt			
Recherchenort DEN HAAG		Abschlußdatum der Recherche 17. Oktober 2002	Erfinder Horváth, R
KATEGORIE DER GENANNTEN DOKUMENTE			
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